Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of:

Notice of Proposed Rulemaking (NPRM)	)	WC Docket No. 02-60
Regarding the Universal Service Support	)	
Mechanism For Rural Healthcare	)	

Reply Comments of the Internet2 Ad Hoc Health Group

Section I Recommendations

The FCC's Rural Health Program is a vital component of the Broadband Plan for the United States. It appropriately recognizes its role vis-à-vis the Broadband Technology Opportunity Program and complements that program by focusing on the health providers and not the 'Anchor Institutions'. It recognizes the need for differing approaches, both support for broadband services and, where it makes sense, the development of infrastructure.

The proposed program should be modified to meet the needs of the community. In particular:

- Consortia of health organizations should be explicitly eligible for all of the Rural Health Programs

- The eligible entities for the Rural Health Program should be as broad as possible to improve the communication among providers and improve the quality of care

- Rural health providers who attain 'Meaningful Use' should be rewarded with additional subsidies rather than penalizing providers who do not attain that status

- Allowing expenses such as administrative and maintenance costs are positive steps. The Commission is encouraged to carefully and judiciously identify ineligible costs. Costs such as a network help desk and conditioned and continuous power are critical to the success of the Rural Health Program

- The administrative processes should be completely overhauled to encourage rather than discourage the use of the program

- The Rural Health Program should be consistent with other Federal Networking programs and allow the required 15% match to come from 'in-kind' sources

- Caps and limits on the number of programs per year are arbitrary and may cause the exclusion of some programs that would provide the most benefit

- Participation in health networks is dynamic and the FCC/USAC process should accept, facilitate and support these changes rather than making them into significant overhead burdens on the Rural Health participants

- Sustainability should be measured in the form of a business or financial plan rather than by individual commitments by institutions

- The use of operating leases to obtain needed telecommunications services should not be prohibited when such leases are of sufficient duration and can be shown to lead to enduring improvements in the telecommunications infrastructure during or after their term expires. Capital leases and ownership of IRUs should

also be permitted.

- Eligible services should include health care providers serving rural and underserved populations irrespective of their geographic location

- Connectivity between health networks such as state wide Health Information Exchanges should be encouraged if not mandatory

- Broadband is a community resource. The Rural Health Program has been designed to only invest in the specific health needs of that resource. However, if and when a community can add to the investment being made by the Rural Health Program and expand the value of the resource to the community, then that should be encouraged. Ultimately, this will reduce the overall broadband costs to the health users and the community as a whole. This concept is extraordinarily true in the rural communities of America. For example, In Texas, the Telecommunications Infrastructure Fund was created by House Bill 2128 in Texas. This fund provided up to $1.5 billion to connect eligible entities in Texas and HB 2128 created a discount structure for K12, Higher Education, Libraries, and Not-for-Profit Healthcare facilities. The Fund and the ongoing discount rate connectivity has increased dramatically in these four “communities” and resulted in significant revenue to the service providers. The proposed changes in the Rural Health program by FCC will stimulate significant “service” revenue in clecs, ilecs, and other service providers.

- Bandwidth, quality of service and availability are critical factors in the success, acceptance and use of advanced broadband medical applications. As these applications are accepted and extended to providers' offices and small clinics, bandwidth requirements will expand like AT&T's traffic with the advent of the iPhone.

- If a broadband service is not affordable, it is unavailable. The Rural Health program must ensure that broadband is available to improve patient care and the existence of broadband is not a sufficient measure of availability.

Section II Concerns

It is important to recognize the requirements of this health community and why these needs have not been met by current commercial offerings and what the community has done to meet these needs independently of the commercial offerings.

<u>Quality of Service</u>

Commercial telecommunication backbones are not optimized for the use of advanced broadband applications by health communities. Because of commercial providers’ business models, their networks deliberately run near capacity, which ensures that they maximize return on investments. This approach leads to congestion, which in turn causes packet loss and increases latency and jitter. Such problems often go unnoticed with applications that are at the core of commercial providers’ business, namely e-mail,

web surfing and other applications that are not sensitive to congested networks.

However, congestion, packet loss, latency and jitter cause unreliable and unacceptable performance for health organizations that want to use advanced broadband applications. For example, a high definition two-way videoconference and telepresence will not work on a congested network. The screen 'pixelates' when packets are dropped. The sound is not synchronized. Even on many of the existing 384kbps H323 video conferencing systems currently in use in the medical community packet loss and congestion can cripple a session. This congestion matters: it is not enough to buy end-user video equipment; you need networks that actually support high definition video and massively large file transfers.

Commercial networks also do not accommodate 'bursty' applications such as the transfer of very large medical files with images. By contrast, Internet2, NLR, and their regional partners have operated networks for years that ensure that bursty applications are as reliable as any other application.

The number of broadband users is growing rapidly, while the amount of broadband consumption per user is also increasing at tremendous rates. The CTO of AT&T stated in 2009 that its backbone will need to be extensively upgraded (far quicker than ever before) just to meet the needs of AT&T's existing users, and he further added that there are limits to the amount of upgrades that are even possible. His comments demonstrate that commercial networks will have difficulty just keeping up with the needs of their core residential users in the years to come. AT&T's core users, of course, are not health institutions using advanced broadband applications.

The gap between the requirements of health organizations that need to use advanced broadband applications, and the capabilities of commercial networks, is widening. The national non-profit networks, conversely, focus on ensuring that organizations can use advanced broadband applications with other institutions across the nation. Thus, given their core mission, Internet2 and NLR make certain that congestion, latency, jitter, and packet loss are non-issues with respect to these networks.

While some commercial carriers may offer expensive advanced applications through one-off, proprietary solutions, such as a virtual private network for a medical link, these create 'walled gardens' that do not scale well or provide cost efficiencies that health users require. These 'dedicated' network' solutions are expensive to build and, at best, can only be used by a finite number of institutions thus impeding possible collaborations between many institutions. This approach directly undermines the increasing need to connect all health care institutions.

Transparency

Given the critical nature and time-sensitivity of many advanced broadband applications used by the health community, network transparency is a necessity. A typical physical network path connecting one doctor to a remote colleague requires crossing several so called 'administrative network domains,' meaning the connection could include any

number of commercial network providers. Commercial providers do not share network performance data as they consider it competitive and proprietary information. Since a problem can occur on any of these 'network' links without transparency on the entire 'end to end' path, it is very difficult to troubleshoot and resolve these issues across networks, significantly hindering the advanced broadband application. The result is an unpredictable, frustrating experience for doctors involved who will likely decide against adopting and using the technology in the future.

The national, regional and local non-profit networks, on the other hand, have a tradition of operating open networks in a collaborative fashion. These networks have also developed and deployed a suite of open-source network performance tools that optimize applications and trouble-shoot problems, especially across network hops. Problem resolution and problem avoidance are far more easily managed because interested parties can immediately pinpoint the root of the problems. Network problems are commonly prevented and quickly resolved when they do occur. The FCC should ensure that these requirements are recognized as valuable criteria in order for networks meaningfully serve the health communities' needs.

Section III Support for Comments

The Internet2 Ad Hoc Health Group agrees with many of the comments submitted to the FCC including:

- The importance of Consortia applications is noted by the Modern Technologies Group who observe that "Support consortium applications that will allow state organizations, public entities and non-profits to apply for funding on behalf of eligible healthcare providers. By providing this flexibility to applicants, the Health Infrastructure Program will be greatly served by allowing eligible health care providers to benefit from those that have a deep understanding of the challenges of bringing broadband infrastructure to rural communities and health care facilities." We agree that consortia are key to the success of the Rural Health Programs.

- The Telecommunications Industry Association observation that the creation of the Health Infrastructure Program and the Health Broadband Service Program is a critical step in ensuring that the successes of deployments already highlighted by TIA can be made available to eligible health care facilities across the country. The benefits of a robust rural health care program are many: the use of health-related applications delivered over broadband will not only save lives, but also cut costs by shortening average hospital stays, reducing the need for tests, and increasing administrative efficiencies. Health care will improve, while health care costs will be lowered. This is an important observation from an influential group.

- Consortia are now convinced that the health community will benefit by connecting all health institutions. We completely agree and note for example: the New England Telehealth Consortium recommends "Expand interpretation of "eligible health care provider" to include: acute care facilities that provide services

traditionally provided at hospitals, such as skilled nursing facilities and renal dialysis centers and facilities, and administrative offices and data centers that do not share the same building as the clinical offices of a health care provider but that perform support functions critical for the provision of health care. 105 NETC sites that fell into the above category decided to drop out of the RHCPP because the costs were prohibitive."

- The New England group also recommend funding to support up to 85% of the cost of connecting health care networks to Internet2 or National LambdaRail. NETC strongly supports this reform.

- The California Telehealth Network (CTN) observation that the infrastructure investments and broadband support should be targeted toward areas of high poverty and high cost (often rural) environments.

- CTN also notes the Commission should alleviate the significant administrative burdens with which Rural Health applicants have had to contend and avoid imposing any further impediments of this sort. For example, the Commission should eliminate or simplify the urban-rural cost differential as the basis for calculating support under the RHCS fund, as that process has proven to be too cumbersome for many small health facilities to conduct. The Internet2 Ad Hoc group made specific recommendations to address these burdens.

- We agree with the Health Information Exchange of Montana that recommends that the required cash matching funds for infrastructure projects should either be decreased from 15% to 10%, or sourcing requirements for the 15% match should be aligned with other federal broadband grant programs by allowing non-cash, in kind contributions.

- We also agree with Montana's recommendation that broadband services (and equipment) support should fund one-time installation charges at 85%.

- Geisinger's observation that the RHCPP grant also enables local hospitals to exchange high quality studies and images of critically ill children with Geisinger's pediatric cardiologists. Geisinger pediatric experts can now interpret data remotely and determine whether a child really needs to travel to be seen by a specialist or should be transferred to a facility offering specialty care. Finally, the RHCPP grant allowed Geisinger to construct a series of backup connections throughout the region so that, if a line is disabled from bad weather or other reasons, broadband connectivity between Geisinger hospitals and community practice sites will not be interrupted. Quarterly statistics have shown that these programs have quickly become sustainable. Make no mistake, these technological investments have saved lives and improved the quality of care for patients in Central and Northeastern Pennsylvania, but there is more work that needs to be done to address the needs of the rural health care community.

Geisinger's comments go on to note the importance of the quality of the broadband required to support these services and that it is not available from the commodity Internet.

- We note with approval that some providers recognize the importance and value of the program such as "Qwest supports the Commission creating a health infrastructure program that would support up to 85% of the construction costs of new regional or statewide networks to serve public and non-profit health care providers in areas of the country where broadband is unavailable or insufficient."

- Fort Drum Regional Health Planning Organization expands this recommendation to include inside wiring or networking equipment: The NPRM should include some costs for networking equipment. Routers, switches and firewalls that interface with the service provider termination equipment often need to be upgraded to support the new high-speed connections.

- The need for the Rural Health Program is SIGNIFICANT as the Iowa Health System has shown:

  IHS provided evidence of the vulnerability of the area that we proposed to serve when applying for the BTOP grant and argued that the project's ability and plan to serve these groups justifies the investment of federal funds.

  Rural: Iowa is a rural agricultural state with almost 3 million residents. Iowa ranks 35 in the country in terms of population density. Of Iowa's 99 counties, only 20 counties are classified as a part of a metropolitan area. Physical distance leaves rural residents geographically vulnerable. In addition, pre-recession indicators from 2007 show that non-metro incomes were 84.6% of metro incomes (a difference of $5000 per capita) and that all counties with unemployment rates in excess of the national average were classified as rural. High-speed broadband service can negate some distance barriers.

  Elderly: Iowa's residents are among the oldest in the nation. In 2007, 14.7% of Iowans were at least 65 years of age (5th in the US) and 2.59% were at least 85 years old (3rd in the US). The continued aging of Iowa is projected to increase at a rate higher than the national level. By 2030, 22.4% of Iowans will be seniors and 84 Iowa counties will have at least a 20% senior population. Elderly disproportionately reside in rural areas, comprising 25.4% of residents. Elderly populations are vulnerable; many are on fixed incomes, have physical and mental limitations and require supplemental services for daily living activities. Affordable access to high-speed broadband supports services for seniors and their specific needs.

  Medically Underserved: High-speed broadband service permits expanded use of distance learning, telehealth services, and electronic medical records sharing. Broadband will provide direct healthcare services and assist with recruitment and

retention of healthcare professionals. The need for direct health services is great. In Iowa, 38% of residents have at least one chronic disease (Lewin Group, 2007). Iowa's mortality rates for the top three chronic conditions (Heart Disease, Stroke, and All Cancers) exceed national averages (CDC, 2007). Other notable chronic health indicators for Iowans include colorectal cancer mortality, COPD mortality for age 45 and older, mental disorder mortality, and obesity. These acute conditions often require emergency care, hospitalization and follow-up care. Of Iowa's 99 counties, 56 counties are classified in whole or in part as medically underserved areas, and only 6 are metropolitan counties (HRSA, 2008). In total, there are 80 designated medically underserved areas in Iowa. Iowa ranks 44th overall in providing access to primary care physicians.

An Iowa Department of Public Health study finds that, to ensure every Iowan has access to health care; at least 250 more providers are needed in underserved communities. The report estimates that nearly 242,000 Iowans will lack reliable access to care by 2015. In addition, Iowa ranks in the lower 10% for certain specialists, including neurosurgeons and psychiatrists. Whatever entity provides health care for a vulnerable population, however that is determined, should be eligible for funding regardless of how that entity's business structure has been configured. The point of the fund is to get health care where it is needed the most.

The Iowa data is not atypical. The need is significant and the Rural Health Program is an important program is helping to meet these needs. It is not sufficient and must be coordinated with other government programs. The Broadband Technology Opportunity Program is investing 'one-time' monies to build significant broadband infrastructure primarily to connect "Anchor Institutions". While this is a critical step for the nation it is a complementary program to the Rural Health Program and should not replace or delay this program.

Section IV Conclusion

The proposed rule changes to the Rural Health Program indicate a sincere positive intention to foster the improvement of health related activities that serve the rural and underserved populations in the US. We applaud the FCC for their intentions. However, we believe that the program will only be successful if a number of changes are made to the proposed rules. Primary among those recommended changes is the overhaul of the application and administrative processes used to administer the program. Failure to fundamentally change these processes will result in the continued underutilization of the program and resulting lack of benefit to the US health system as a whole. The recognition in the proposed rules of a testing and evaluation activity is viewed as a very positive step and the FCC is encouraged to adopt this activity and to adopt its internal processes to react to the results that come from the testing and evaluation.

We further recognize that the US Health System is dynamic and quickly changing environment. The FCC has an opportunity to become a significant partner in the US

Health System and must coordinate and partner with other government and state activities to accomplish that goal.